	Application No.	Applicant(s)
Notice of Allowability	10/750,090	JIANG ET AL.
	Examiner	Art Unit
	MENGYAO ZHE	2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _1/16/2009_.

2. ☒ The allowed claim(s) is/are _1-3,5-14,16-22,24-31,33 and 34_.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

       a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

           1. ☐ Certified copies of the priority documents have been received.

           2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

           3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _20090424_ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

/VAN H NGUYEN/
Primary Examiner, Art Unit 2194

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to the applicant, an amendment may be filed as

provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Mr. Ramin Aghevli on 4/24/3009.

The application has been amended as follows:

In the Claims:

This listing of claims will replace all prior versions and listings of claims in the

application:

1.   (Currently Amended) A method comprising:

determining a state of a variable corresponding to a semaphore;

generating a semaphore entry for a thread of instructions prior to dispatch of the

thread for execution if the variable is in a first state, wherein the first state indicates that

the semaphore is to notify the thread that the semaphore has been acquired; and

dispatching the thread of instructions for execution prior to generating the semaphore entry for the thread if the variable is in a second state, wherein the second state indicates that the semaphore is not to notify the thread that the semaphore has been acquired,

wherein the semaphore is to cause change in a state of the thread via a thread scheduler and wherein generating the semaphore entry for the thread of instructions prior to dispatch of the thread of instructions if the variable is in the first state comprises:

transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions; and

dispatching the thread of instructions to execution circuitry in response to receiving a signal indicating that the semaphore entity has processed the message.

2.   (Currently Amended) The method of claim 1 further comprising dispatching the thread of instructions for execution and during the thread execution generating a semaphore entry for the thread if the variable is in a third state.

3.   (Currently Amended) The method of claim 1 wherein the variable corresponding to the semaphore indicates whether [[a]] the semaphore entity is to automatically transmit a message indicating control of the semaphore to execution circuitry corresponding to the thread of instructions.

4.   (Canceled)

5.   (Currently Amended) The method of claim [[4]] 1 wherein the transmitting the message to the semaphore entity and dispatching the thread of instructions are pipelined.

6.   (Currently Amended) The method of claim [[4]] 1 wherein the message comprises a semaphore identifier field, a thread identifier field, and a field corresponding to the variable.

7.   (Original) The method of claim 1 wherein dispatching the thread of instructions for execution prior to generating the semaphore entry for the thread if the variable is in a second state comprises:

dispatching the thread of instructions to execution circuitry; and

transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to a signal indicating that execution of the thread of instructions has commenced.

8.   (Original) The method of claim 7 wherein the dispatching of the thread of instructions and transmitting of the message to the semaphore entity are pipelined.

9.   (Original) The method of claim 7 wherein the message comprises a semaphore identifier field, a thread identifier field, and a field corresponding to the variable.

10.   (Currently Amended) The method of claim 2 wherein dispatching the thread of instructions for execution and during the thread execution generating the semaphore entry for the thread if the variable is in a third state comprises:

dispatching the thread of instructions to execution circuitry; and

transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to the execution of a set of instructions.

11.   (Original) The method of claim 10 wherein the set of instructions comprises an acquire semaphore instruction.

12.   (Original) The method of claim 10 wherein the set of instructions comprises an acquire semaphore with auto-release instruction.

13.   (Currently Amended) An apparatus comprising:

means for determining a state of a variable corresponding to a semaphore;

means for generating a semaphore entry for a thread of instructions prior to dispatch of the thread for execution if the variable is in a first state, wherein the first

state indicates that the semaphore is to notify the thread that the semaphore has been

acquired;

means for dispatching the thread of instructions for execution prior to generating

the semaphore entry for the thread if the variable is in a second state, wherein the

second state indicates that the semaphore is not to notify the thread that the semaphore

has been acquired,

wherein the semaphore is to cause change in a state of the thread via a thread

scheduler;

dispatching the thread of instructions for execution and during the thread

execution generating a semaphore entry for the thread if the variable is in a third state;

and

a storage device to store the semaphore entry, wherein the means for generating

the semaphore entry for the thread of instructions prior to dispatch of the thread of

instructions if the variable is in the first state is to comprise:

means for transmitting a message to a semaphore entity to request control

of the semaphore by the thread of instructions; and

means for dispatching the thread of instructions to execution circuitry in

response to receiving a signal indicating that the semaphore entity has processed the

message.

14.　　(Currently Amended) The apparatus of claim 13 further comprising means for dispatching the thread of instructions for execution and during the thread execution generating a semaphore entry for the thread if the variable is in a third state.

15.　　(Canceled)

16.　　(Original) The apparatus of claim 13 wherein the means for dispatching the thread of instructions for execution prior to generating the semaphore entry for the thread if the variable is in a second state further comprises:

　　　　means for dispatching the thread of instructions to execution circuitry; and

　　　　means for transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to a signal indicating that execution of the thread of instructions has commenced.

17.　　(Currently Amended) The apparatus of claim 14 wherein the means for dispatching the thread of instructions for execution and during the thread execution generating the semaphore entry for the thread if the variable is in a third state comprises:

　　　　means for dispatching the thread of instructions to execution circuitry; and

　　　　means for transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to the execution of a set of instructions.

18.   (Currently Amended) An apparatus comprising:

a semaphore entity to maintain entries for a semaphore indicating one or more threads of instructions requesting control of the semaphore;

~~execution circuitry~~ a processor to execute one or more threads of instructions; and

a thread dispatcher coupled with the semaphore entity and the execution circuitry, the thread dispatcher to determine a state of a variable corresponding to the semaphore, generate a message to the semaphore entity to cause a semaphore entry for a thread of instructions to be generated prior to dispatch of the thread of instructions to the ~~execution circuitry~~ processor for execution if the variable is in a first state, wherein the first state indicates that the semaphore is to notify the thread that the semaphore has been acquired, and dispatch the thread of instructions to the ~~execution circuitry~~ processor for execution prior to generating a message to the semaphore entity to cause the semaphore entry for the thread to be generated if the variable is in a second state, wherein the second state indicates that the semaphore is not to notify the thread that the semaphore has been acquired,

wherein the semaphore is to cause change in a state of the thread via a thread scheduler and wherein the thread dispatcher is to transmit a message to a semaphore entity to request control of the processor by the thread of instructions and dispatch the thread of instructions to the processor in response to receiving a signal indicating that the semaphore entity has processed the message.

19.   (Currently Amended) The apparatus of claim 18 wherein the thread dispatcher further dispatches the thread of instructions for execution and without generating a semaphore entry for the thread <u>if the variable is in a third state</u>.

20.   (Original) The apparatus of claim 18 wherein the semaphore entity maintains one or more semaphores.

21.   (Original) The apparatus of claim 18 wherein the message comprises a semaphore identifier field, a thread identifier field, and a field corresponding to the variable.

22.   (Original) The apparatus of claim 18 wherein the variable corresponding to the semaphore indicates whether a semaphore entity is to automatically transmit a message indicating control of the semaphore to execution circuitry corresponding to the thread of instructions.

23.   (Canceled)

24.   (Currently Amended) The apparatus of claim [[23]] <u>18</u> wherein the operations of transmitting the message to the semaphore entity and dispatching the thread of instructions are pipelined.

25.   (Original) The apparatus of claim 18 wherein dispatching the thread of instructions to the execution circuitry for execution prior to generating a message to the semaphore entity to cause the semaphore entry for the thread to be generated if the variable is in a second state comprises dispatching the thread of instructions to execution circuitry, and transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to a signal indicating that execution of the thread of instructions has commenced.

26.   (Original) The apparatus of claim 25 wherein the operations of transmitting the message to the semaphore entity and dispatching the thread of instructions are pipelined.

27.   (Original) The apparatus of claim 19 wherein the execution circuitry generates a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to the execution of a set of instructions.

28.   (Currently Amended) A system comprising:

a memory controller;

a semaphore entity to maintain entries for a semaphore indicating one or more threads of instructions requesting control of the semaphore;

~~execution circuitry~~ <u>a processor</u> to execute one or more threads of instructions; and

a thread dispatcher coupled with the semaphore entity, the execution circuitry and the memory controller to determine a state of a variable corresponding to the semaphore, generate a message to the semaphore entity to cause a semaphore entry for a thread of instructions to be generated prior to dispatch of the thread of instructions to the ~~execution circuitry~~ <u>processor</u> for execution if the variable is in a first state, wherein the first state indicates that the semaphore is to notify the thread that the semaphore has been acquired, dispatch the thread of instructions to the ~~execution circuitry~~ <u>processor</u> for execution prior to generating a message to the semaphore entity to cause the semaphore entry for the thread to be generated if the variable is in a second state, wherein the second state indicates that the semaphore is not to notify the thread that the semaphore has been acquired, wherein the semaphore is to cause change in a state of the thread via a thread scheduler, and dispatch the thread of instructions for execution and without generating a semaphore entry for the thread <u>if the variable is in a third state, wherein the thread dispatcher is to transmit a message to a semaphore entity to request control of the semaphore by the thread of instructions and dispatch the thread of instructions to the processor in response to receiving a signal indicating that the semaphore entity has processed the message</u>.

29.   (Currently Amended) The system of claim 28 wherein the thread dispatcher further dispatches the thread of instructions for execution and without generating a semaphore entry for the thread <u>if the variable is in a third state</u>.

30.   (Original) The system of claim 28 wherein the message comprises a semaphore identifier field, a thread identifier field, and a field corresponding to the variable.

31.   (Original) The system of claim 28 wherein the variable corresponding to the semaphore indicates whether a semaphore entity is to automatically transmit a message indicating control of the semaphore to execution circuitry corresponding to the thread of instructions.

32.   (Canceled)

33.   (Original) The system of claim 28 wherein dispatching the thread of instructions to the execution circuitry for execution prior to generating a message to the semaphore entity to cause the semaphore entry for the thread to be generated if the variable is in a second state comprises dispatching the thread of instructions to execution circuitry, and transmitting a message to a semaphore entity to request control of the semaphore by the thread of instructions in response to a signal indicating that execution of the thread of instructions has commenced.

34.   (Original) The system of claim 28 wherein the operations of transmitting

the message to the semaphore entity and dispatching the thread of instructions are

pipelined.

Conclusion

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to MENGYAO ZHE whose telephone number is (571)272-
6946. The examiner can normally be reached on Monday Through Friday, 7:30 - 5:00
EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
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USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VAN H NGUYEN/
Primary Examiner, Art Unit 2194